SHORTER NOTES

A NEW LOCATION FOR PELLAEA GLABELLA IN MINNESOTA.—During July 1977, while studying pteridology under Prof. W. H. Wagner, Jr., of the University of Michigan at the University of Minnesota Biological Station, I found a new locality in Minnesota for the Smooth Cliff Brake, *Pellaea glabella* Mett. ex Kuhn. The species was discovered on July 10 and a specimen collected on July 18. A colony of five small plants was found in a precarious location at the top of a rock outcropping about 30 m above Highway 61 and overlooking Lake Superior. The locality is in Lake County, approximately two miles north of Illgen City, and about 55 miles north of Duluth. A voucher, *Weber 1*, has been deposited in the herbarium of the University of Minnesota (MIN). The northernmost station previously known for *P. glabella* in Minnesota is about 130 miles to the southwest in Chisago County between Minneapolis-St. Paul and Duluth, according to Tryon's "The Ferns and Fern Allies of Minnesota" (1954, p. 52). According to Billington's "Ferns of Michigan" (1952, p. 211), there is also a station in Ontonagon County in the upper peninsula of Michigan that is about 100 miles southeast across Lake Superior from the Lake County, Minnesota locality.—*Larry A. Weber, 415 W. St. Louis St., Pacific, MO 63069.*

SOME INSECT INTERACTIONS WITH AZOLLA MEXICANA.—It is common knowledge that ferns are not very much affected by insect predation due to the high content of chemical repellents within the plants. Still, not enough is known about the relations of ferns and insects to make this statement an invariably valid generalization. In search of examples of insect-fern interactions, I came upon a mat of *Azolla mexicana* Schlecht. & Cham. and *Lemna* sp. in the Río Potrero, Province of Guanacaste, Costa Rica, where a yellow solitary wasp, *Polybia rejecta* (F.) forma *belizensis* Cameron, was observed hovering and alighting on the *Azolla* plants, wandering about, and inserting its head among the compact leaves. When a suitable spot was found by the wasp, it went completely underwater, upturned the *Azolla*, and then searched among the roots of the fern. Capture of the *Polybia* wasp immediately after this search-submerge-catch operation brought to light an interesting case of interaction. Two genera of beetles of the family Dryopidae breed their larvae among the *Azolla* roots, which afford shelter and food for the beetles. The wasp preys on these larvae, although its diet is not restricted to them, as these wasps are rather opportunistic. Whether the Dryopidae larvae are a natural control of *Azolla* populations in this habitat is not known. But if so, *Polybia rejecta* may be responsible for controlling the Dryopid population, and thus may affect the *Azolla* population dynamics. Or perhaps the "yellow submarine" is only an occasional factor in the biology of the Dryopidae and, hence, of the *Azolla*. Apparently only one other record of submerging wasps is known, a report from eastern North America by Caudell (Proc. Entom. Soc. Washington **24:** 125-126. 1922).—*Luis D. Gómez P., Herbario Nacional, Museo Nacional de Costa Rica, Apartado 749, San José, Costa Rica.*